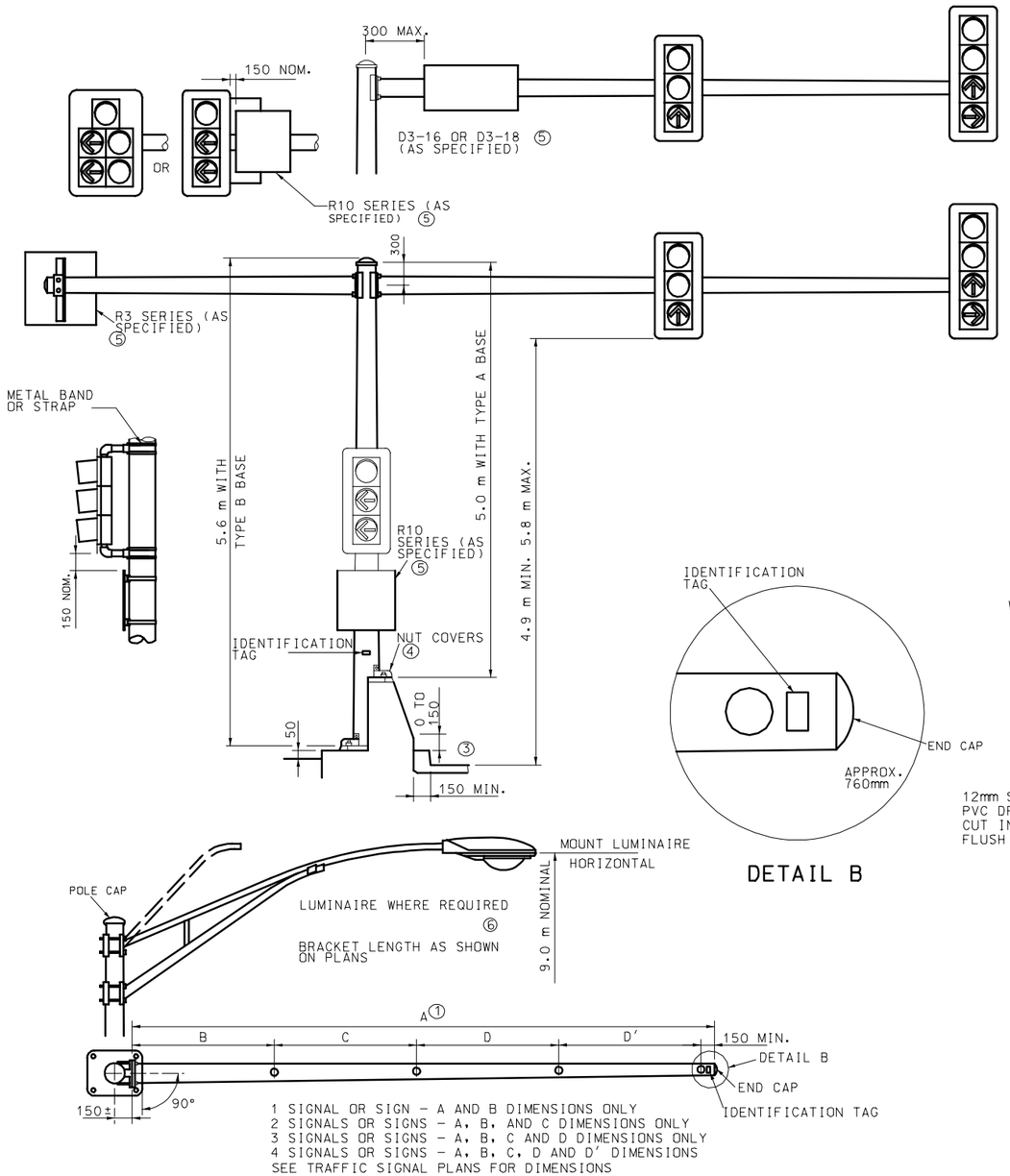
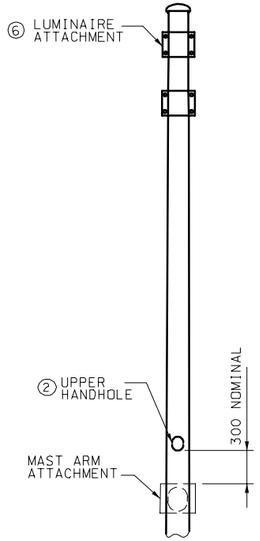
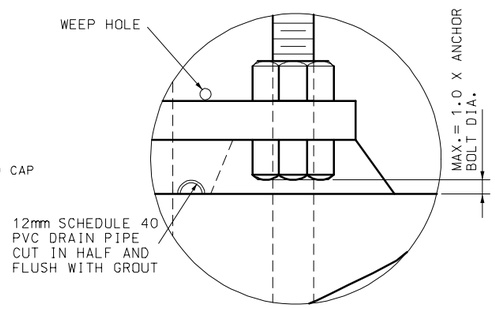




TYPE BL AND CL POSTS

DETAIL B

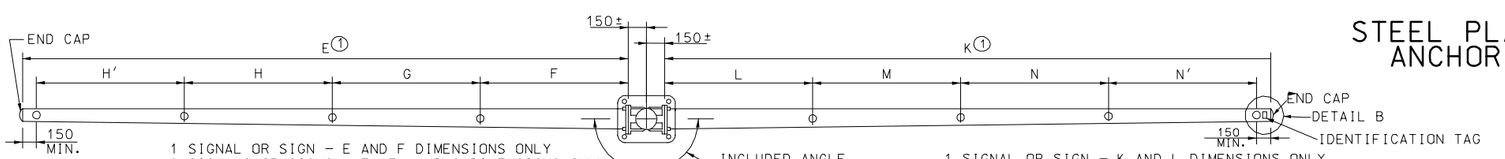


DETAIL A

1 SIGNAL OR SIGN – A AND B DIMENSIONS ONLY
2 SIGNALS OR SIGNS – A, B, AND C DIMENSIONS ONLY
3 SIGNALS OR SIGNS – A, B, C AND D DIMENSIONS ONLY
4 SIGNALS OR SIGNS – A, B, C, D AND D' DIMENSIONS
SEE TRAFFIC SIGNAL PLANS FOR DIMENSIONS

TYPE C AND TYPE CL (WITH LUMINAIRE)

STEEL PLATE AND ANCHOR BASE

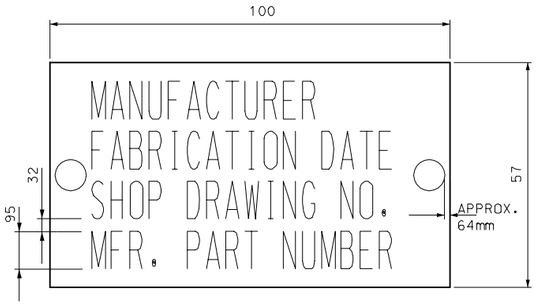


1 SIGNAL OR SIGN – E AND F DIMENSIONS ONLY
2 SIGNALS OR SIGNS – E, F, AND G DIMENSIONS ONLY
3 SIGNALS OR SIGNS – E, F, G, AND H DIMENSIONS ONLY
4 SIGNALS OR SIGNS – E, F, G, H AND H' DIMENSIONS

1 SIGNAL OR SIGN – K AND L DIMENSIONS ONLY
2 SIGNALS OR SIGNS – K, L, AND M DIMENSIONS ONLY
3 SIGNALS OR SIGNS – K, L, M, AND N DIMENSIONS ONLY
4 SIGNALS OR SIGNS – K, L, M, N AND N' DIMENSIONS

SEE TRAFFIC SIGNAL PLANS FOR DIMENSIONS

TYPE B AND TYPE BL (WITH LUMINAIRE)



IDENTIFICATION TAG

ID TAG NOTE:

TAG SHALL BE ALUMINUM OR STAINLESS STEEL AND ATTACHED TO POLE OR MAST ARM USING TWO RIVETS OR STAINLESS STEEL DRIVE SCREWS. ID TAG HOLES SHALL BE DRILLED PRIOR TO GALVANIZING.

① ARM LENGTHS SHALL NOT EXCEED 16.5 m.

② HANDHOLES SHALL BE APPROXIMATELY 100 mm x 165 mm. HANDHOLE FRAME SHALL BE REINFORCED SO THAT THE POLE STRENGTH IS NOT REDUCED.

③ 0 mm TO 150 mm VARIATION IN BASE HEIGHT IS FOR OBTAINING 4.9 m CLEARANCE. 0.10 m^3 CONC. AND 1.4 kg REINFORCING STEEL PER 150 mm.

④ POSTS SHALL BE FURNISHED WITH INDIVIDUAL NUT COVERS.

⑤ NO SIGN IN EXCESS OF 1.35 m^2 SHALL BE INSTALLED ON POSTS OR MAST ARMS. SIGNS EXCEEDING 0.54 m^2 SHALL BE LOCATED SO THAT THE EDGE OF THE SIGN IS NO MORE THAN 300 mm FROM THE CENTERLINE OF THE POST.
D3 SERIES SIGNS AS WELL AS SIGNS INSTALLED ON THE POST SHALL BE MOUNTED WITH A STRAP TYPE SIGN SUPPORT. R10 SERIES SIGNS INSTALLED ON THE MAST ARM SHALL BE MOUNTED WITH A SIGN BRACKET ASSEMBLY.

⑥ SEE DRAWING 901.00 FOR TYPICAL BRACKET ARM MOUNTING FOR TYPE BL AND TYPE CL POSTS.

⑦ EXPANSIVE GROUT SHALL BE USED BETWEEN THE POST BASE PLATE AND CONCRETE BASE.

⑧ POST SHALL BE GROUNDED FROM GROUND LUG IN POST WITH 16 mm^2 BARE COPPER WIRE TO CONDUIT SYSTEM. GROUND LUG SHALL BE 90° OR 180° FROM THE HANDHOLE.

GENERAL NOTES:

ALL DIMENSIONS ARE SHOWN ARE IN mm UNLESS OTHERWISE NOTED.

ARMS SHALL BE RAKED UP 0.0.02 m/m MINIMUM. ARMS SHALL BE PROVIDED WITH A PERMANENT MARKING INDICATING PROPER ORIENTATION FOR ISTALLATION.

SIGNS AND SIGNALS SHALL BE VERTICAL. SIGNAL HEADS ON MAST ARMS SHALL BE TILTED FORWARD FROM THE TOP 3 TO 7 DEGREES FROM VERTICAL.

IF A SIGN EXCEEDS 1050 mm IN LENGTH, TWO STRAP SUPPORTS ARE REQUIRED: AND IF A SIGN EXCEEDS 2400 mm IN LENGTH, THREE STRAP SUPPORTS ARE REQUIRED.

TO DETERMINE LEFT OR RIGHT ON TYPE B OR C SIGNAL POST, VIEWING POSITION SHALL BE FROM THE CENTER OF THE INTERSECTION BEING CONTROLLED AND FACING THE SIGNAL INVOLVED.

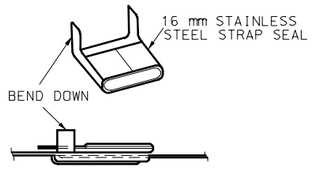
SEE DRAWING M902.30 FOR FOUNDATION AND ANCHOR BOLT DETAILS.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

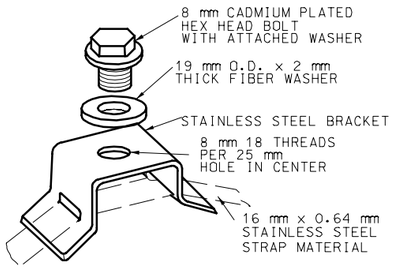
TRAFFIC SIGNALS

TUBULAR STEEL POSTS

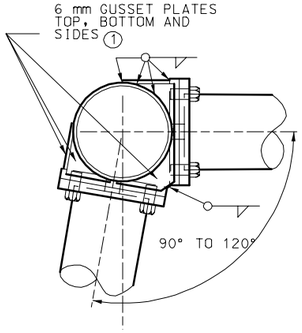
DATE:_____ | EFFECTIVE: 07-01-2004 | **M902.40N** | 1/3

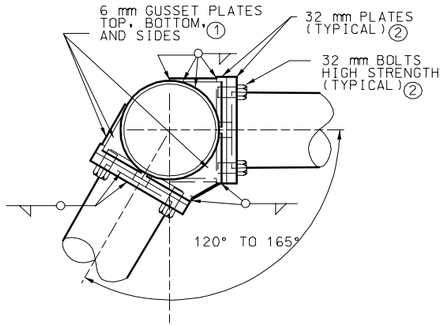


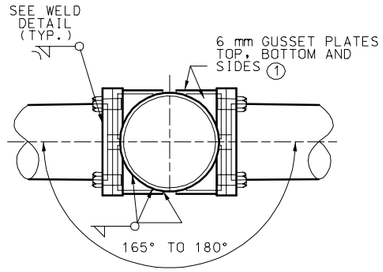
VIEW SHOWING
ENDS OF STRAP
CLALMPED IN SEAL

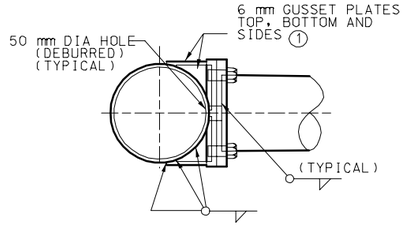


STRAP TYPE
SIGN SUPPORT





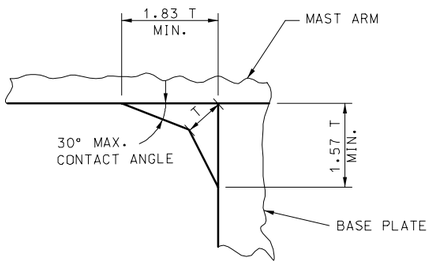




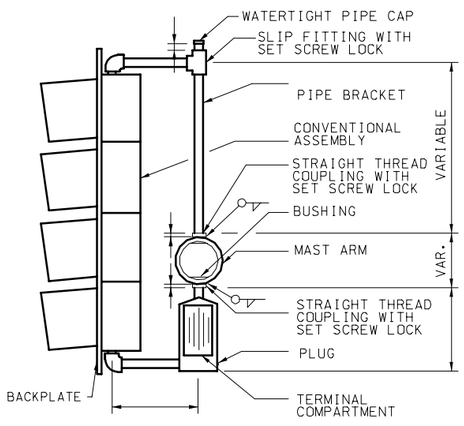
(1) ANY OPENINGS BETWEEN TOP AND SIDE GUSSET PLATES SHALL BE SEALED WITH LIFETIME CAULK AT TIME OF INSTALLATION.

(2) PLATE AND BOLT SIZES SHALL BE SHOWN ON FABRICATORS SHOP DRAWINGS AND SHALL BE SUBJECT TO APPROVAL.

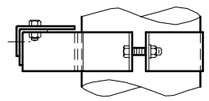
ARM ATTACHMENTS



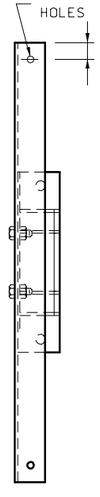
WELD DETAIL

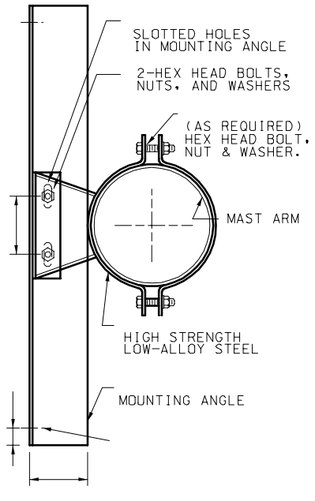


MAST ARM MOUNTED
SIGNAL HEAD



TOP VIEW





FRONT VIEW SIDE VIEW

SIGN BRACKET ASSEMBLY

ALTERNATE DESIGN MAY BE PROVIDED
AS APPROVED BY ENGINEER

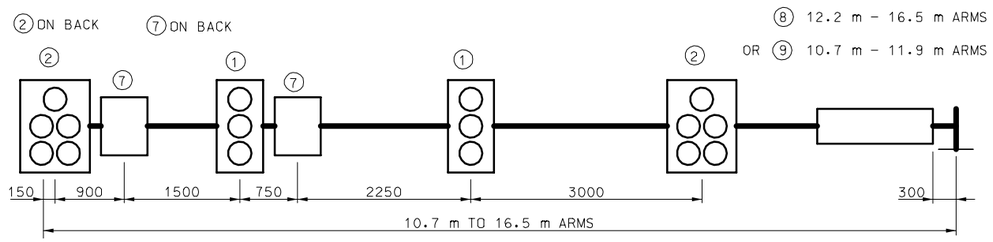
GENERAL NOTE:

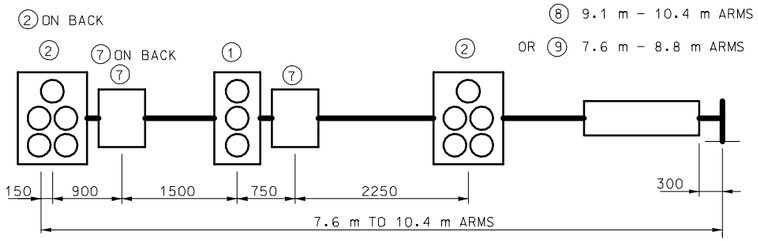
ALL DIMENSIONS SHOWN ARE IN mm UNLESS OTHERWISE NOTED.

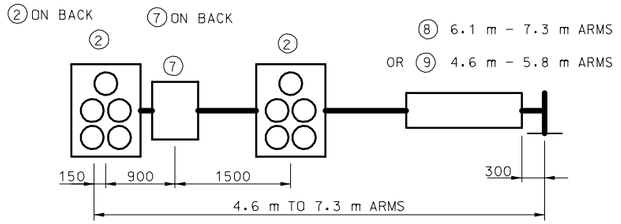
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

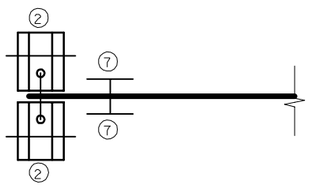
TRAFFIC SIGNALS
TUBULAR STEEL POSTS

DATE:_____ EFFECTIVE: 07-01-2004 **M902.40N** 2/3

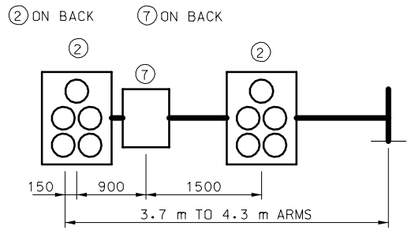


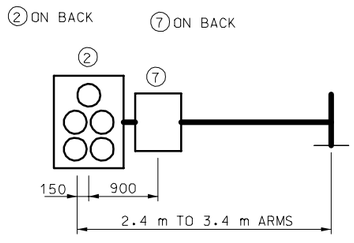




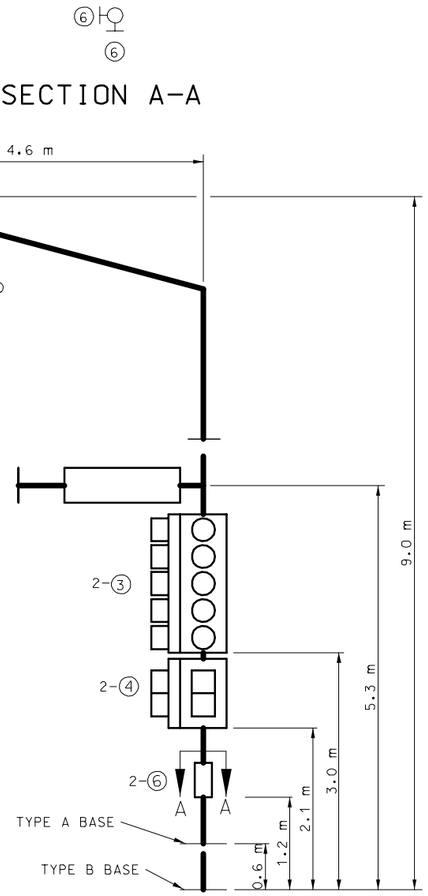


TYPICAL TOP VIEW

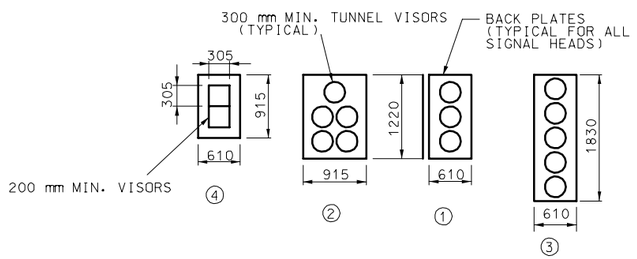




MAST ARM LOADING



TYPICAL POST LOADING



ITEM NO.	DESCRIPTION	WEIGHT (kg)*	PROJ. AREA (m^2)	SURFACE AREA (m^2)
①	3-SECTION OL HEAD	27	0.74	3.02
②	5-SECTION OL HEAD	45	1.12	4.41
③	VERT. 5-SECT. OL HEAD	45	1.12	4.69
④	2-SECTION OL HEAD	18	0.56	2.14
⑤	150 WATT LUMINAIRE	14	0.09	0.33
⑥	225 x 450 SIGN	1	0.10	N/A
⑦	600 x 750 SIGN	12	0.45	N/A
⑧	3000 x 450 SIGN	11	1.35	N/A
⑨	2400 x 400 SIGN	8	1.0	N/A
	2400 x 450 SIGN	10	1.12	N/A

OL– OPTICALLY LIMITED

* MOUNTING HARDWARE INCLUDED

STRUCTURAL DESIGN REQUIREMENTS:

STRUCTURAL SUPPORTS SHALL BE DESIGNED AND FABRICATED TO WITHSTAND THEIR OWN LOADING AND THE ATTACHMENT LOADING SHOWN ON THIS DRAWING OR ON THE PLANS, WHICHEVER IS GREATER. STRUCTURAL MEMBERS INCLUDE POSTS, MAST ARMS AND LUMINAIRE BRACKET ARMS, AS REQUIRED.

DESIGN OF STRUCTURAL SUPPORTS SHALL BE BASED ON AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS, 1994 OR LATEST REVISION, WITH THESE EXCEPTIONS:

MINIMUM DESIGN WIND SPEED OF 145 km AT 9.14 m ABOVE GROUND.

GROUP LOADING:

LOADS	PERCENT OF ALLOWABLE STRESS* (ALL MATERIALS)
GROUP I – DL	100
GROUP II – DL + W	133
GROUP III – DL + ICE + 0.5(**)	133

*NO LOAD REDUCTION FACTORS SHALL BE APPLIED IN CONJUNCTION WITH THESE INCREASED ALLOWABLE STRESSES.

**W TO BE COMPUTED ON THE BASIS OF THE WIND PRESSURE FORMULA, 1197 Pa MINIMUM FOR W FOR GROUP III.

FOR TYPE B AND BL POSTS, ICE AND DEAD LOADING SHALL BE BASED ON THE COMBINED EFFECT OF DESIGN LOADING ON EACH ARM. WIND LOADING IS APPLIED AS DESCRIBED IN SECTION 1.2.5(5)(b) OF THE STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS, 1994 REVISION.

GENERAL NOTES:

ALL DIMENSIONS SHOWN ARE IN mm UNLESS OTHERWISE NOTED.

ATTACHMENT LOCATIONS ARE FOR STRUCTURAL DESIGN PURPOSES ONLY. ACTUAL LOCATIONS ARE SHOWN ON THE PLANS.

MINIMUM DESIGN LOADING FOR POST AND MAST ARM ATTACHMENTS

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

TRAFFIC SIGNALS
TUBULAR STEEL POSTS
DESIGN LOADING REQUIREMENTS

DATE:_____ | EFFECTIVE: 07-01-2004 | M902.40N | 3/3